Acadgild

Full-stack Web Development

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Agenda

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CSS History

CSS was first proposed by Håkon Wium Lie on October 10, 1994 and his proposal was presented in Chicago, Illinois in 1994, and again with Bert Bos in 1995 when W3C was already being established.

Style sheets have existed in one form or another since the beginnings of Standard Generalized Markup Language (SGML) in the 1980s, and CSS was developed to provide style sheets for the web.

In August 1996 Netscape Communication Corporation presented an alternative style sheet language called JavaScript Style Sheets (JSSS). The spec was never finished and is deprecated.

By the end of 1996, CSS was ready to become official, and the CSS level 1 Recommendation was published in December 1996.

CSS History

When	What	Notes
1980	Stylesheets are already among us	Since SGML (Standard General Markup Language) was around.
1994	CHSS (Cascading HTML StyleSheet) Draft Presented	3 Days before the anouncement of Netscape Navigator.
1996	CSS Level 1 Recommendation presented by W3C	After some work and the presentation of other standard such as JSSS. IE3 was released.
1998	CSS Level 2 Recommendation	Adds positioning, media type, font properties etc. Problematic adoption.
2004 - 2007	CSS Level 2.1 Solve problems with difficult adoption and some errata in the 2.0	Moved back and forth between Draft and CR.
1999-2012	CSS Level 3	Different Modules, introduces a lot of things
?	CSS4	Some CSS4 modules are already around.

CSS

What is CSS?

- CSS stands for Cascading Style Sheets.
- It is a style sheet language.
- It is used for describing the presentation of a document written in a markup language.
- Standard way to decorate plain web text with font, colors, colorful and graphical hyperlinks.

Why CSS?

- It is mainly introduced for separation of presentation and markup content.
- It mainly categorizes layout, colors, and fonts.
- It helps to share the styles for multiple HTML documents.
- A style sheet consists of a list of rules which are grouped as Selectors.

What is Cascading?

- The style sheet with the highest priority controls the content display which is Browser Displayed Page.
- Declarations not set in the highest priority source are passed on to a source of lower priority, such as the user agent (browser) style. This process is called cascading.

Cascading Order

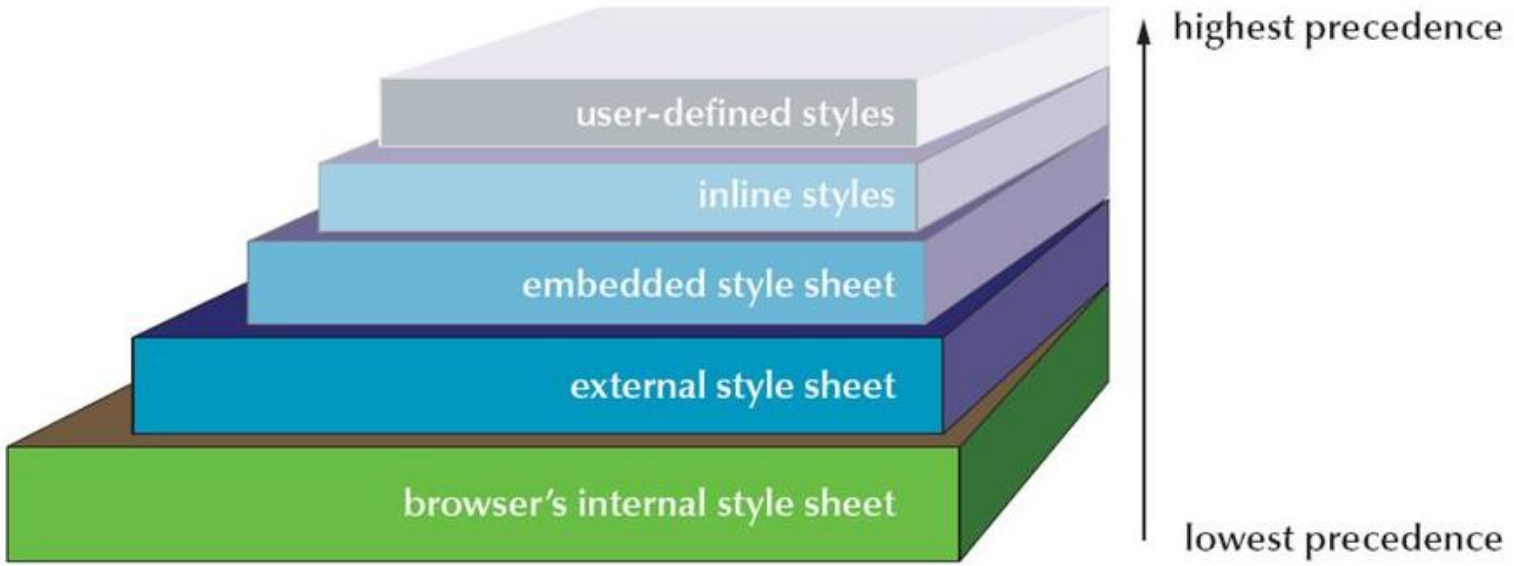
What style is used when there is more than one style specified for an HTML element?
Generally speaking we can say that all the styles will "cascade" into a new "virtual" style sheet by the following rules, where number one has the highest priority.

CSS uses an order of precedence to determine which styles to apply when a selector is formatted in different sources.

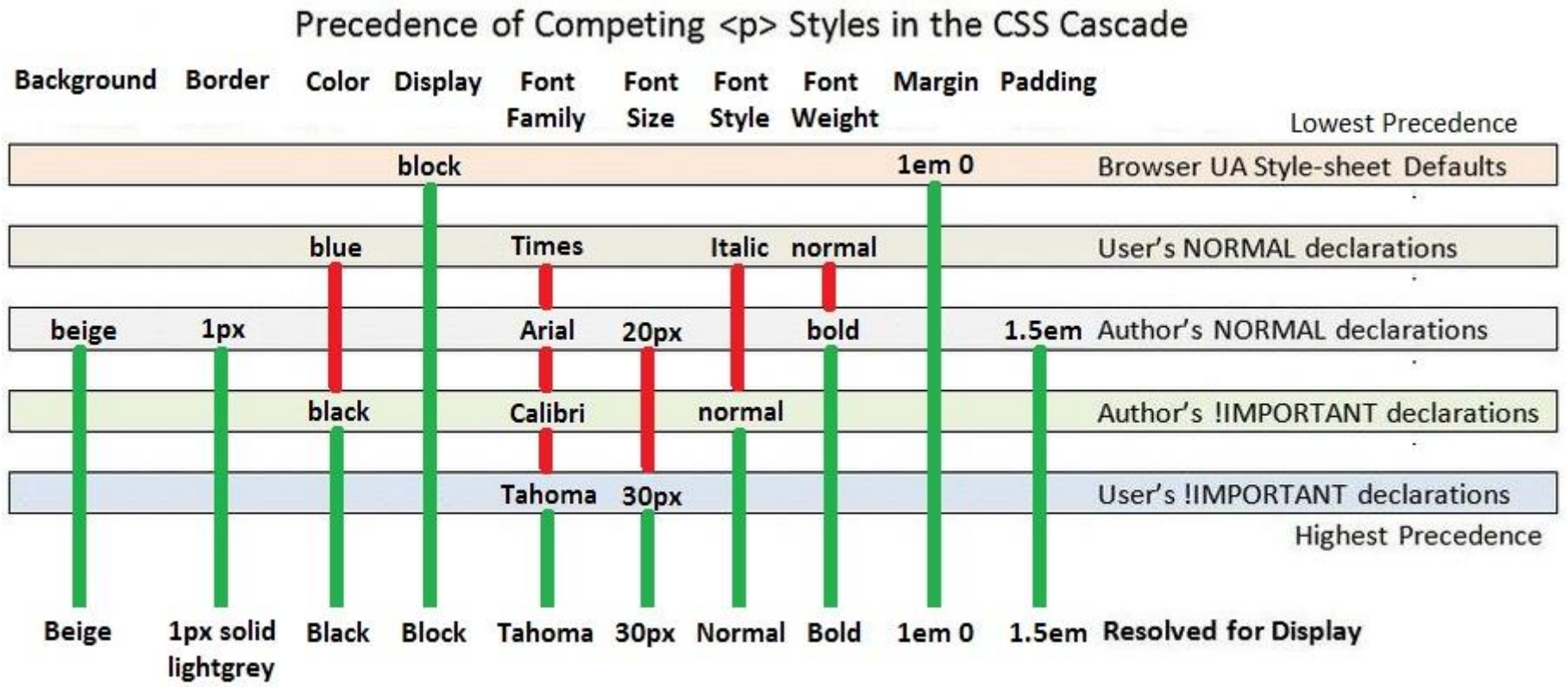
The least important style formatting is the browser's default style settings.

Cascading Order

- Inline style (inside an HTML element)
- External and internal style sheets (in the head section)
- Browser default
- So, an inline style (inside a specific HTML element) has the highest priority, which means that it will override a style defined inside the <head> tag, or in an external style sheet, or a browser default value.



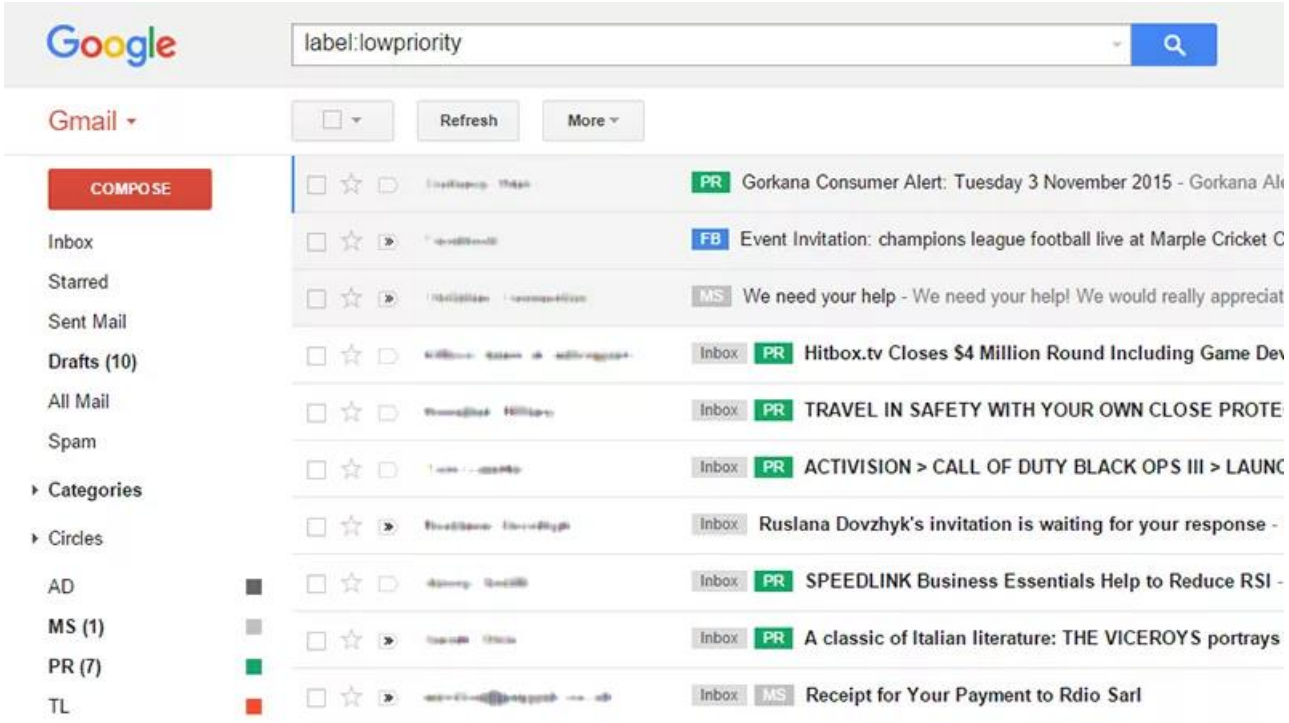
How does precedence work? Have a look at this below table.



How does CSS affect HTML?

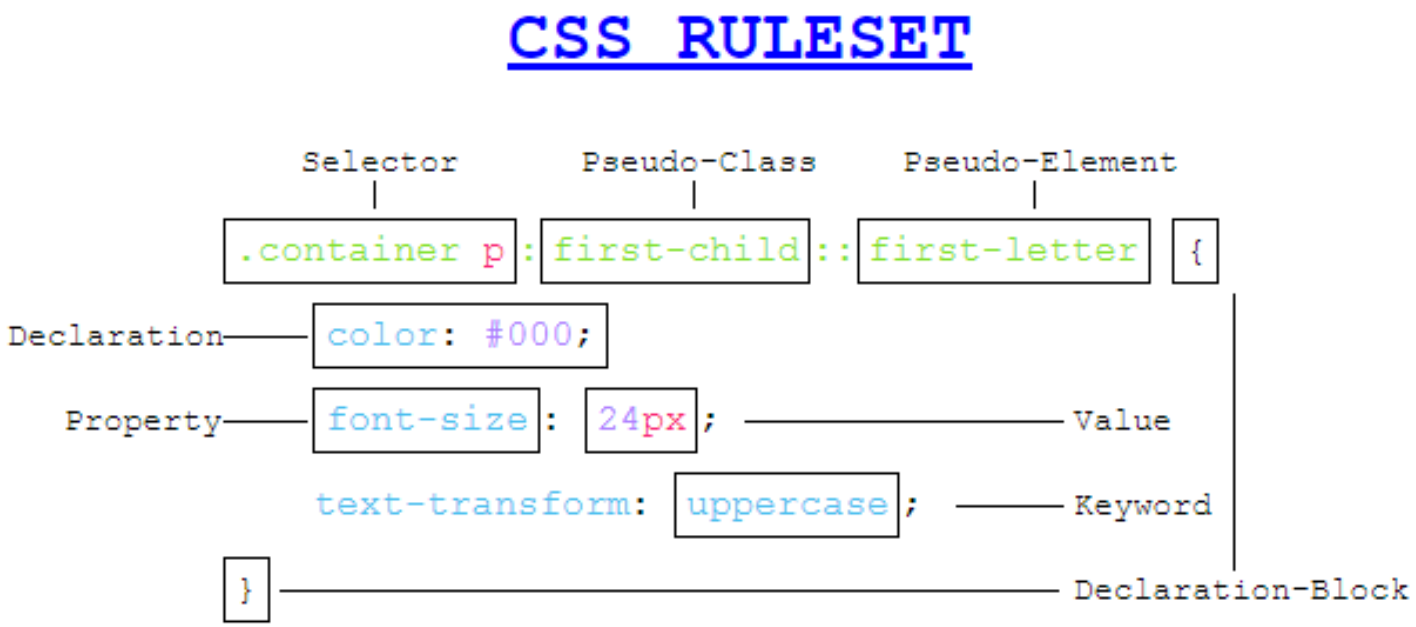
Web browsers apply CSS rules to a document to affect how they are displayed. A CSS rule is formed from:

- A set of properties, which have values set to update how the HTML content is displayed, for example I want my element's width to be 50% of its parent element, and its background to be red.
- A selector, which selects the element(s) you want to apply the updated property values to. For example, I want to apply my CSS rule to all the paragraphs in my HTML document.



CSS Rule-set

What is Rule-Set?
A style sheet consists of a list of *rules*. Each rule or rule-set consists of one or more *selectors*, and a *declaration block*. Here below is a Rule-Set.

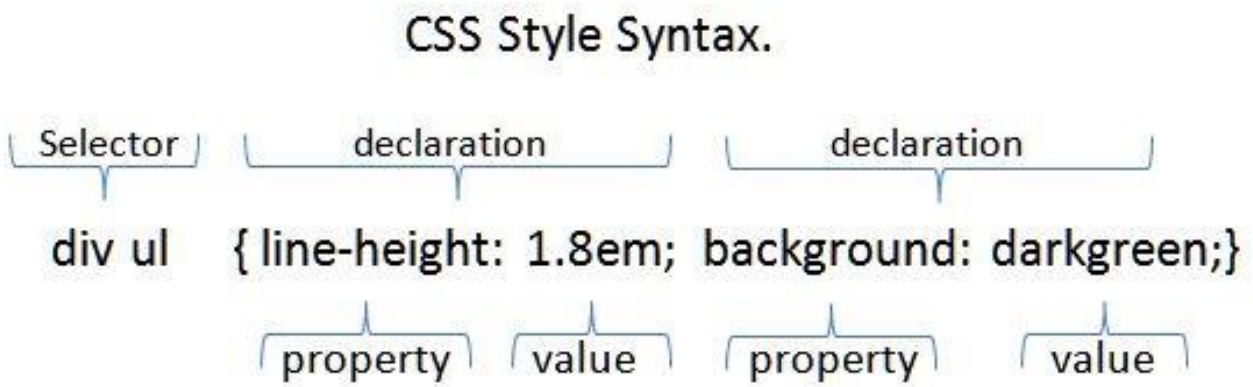


CSS Rule-set

Selector
A **CSS selector** is the part of a **CSS** Rule-set that actually selects the content you want to style.

There are three major selectors available.

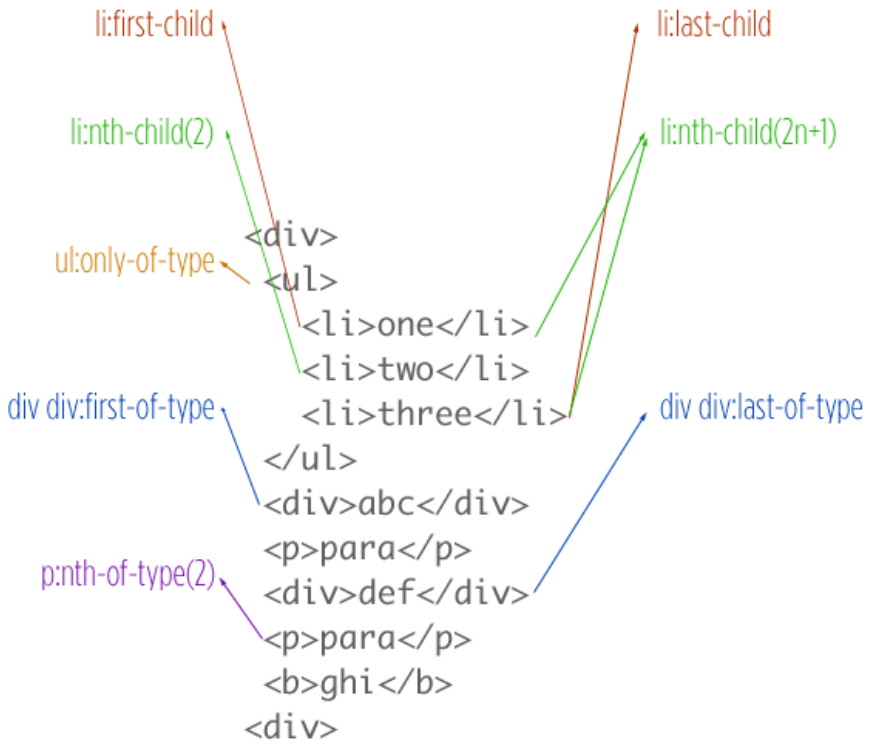
- Type selectors
- Class selectors
- ID selectors



CSS Rule-set

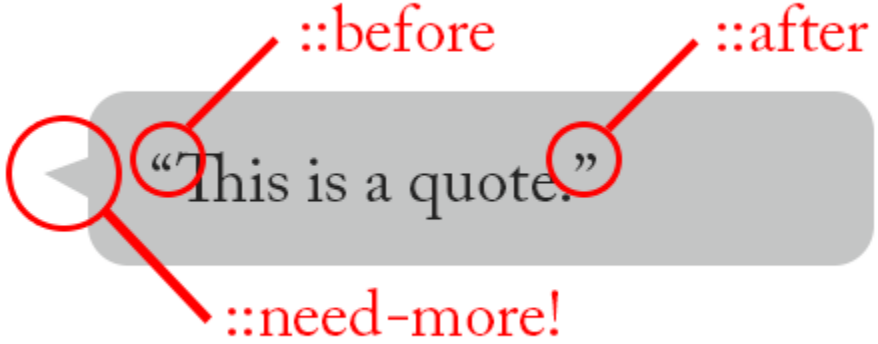
Pseudo Class

A **pseudo-class** is used to define a special state of an element. For example, it can be used to: Style an element when a user hovers the mouse over it. Style visited and unvisited links differently.



CSS Rule-set

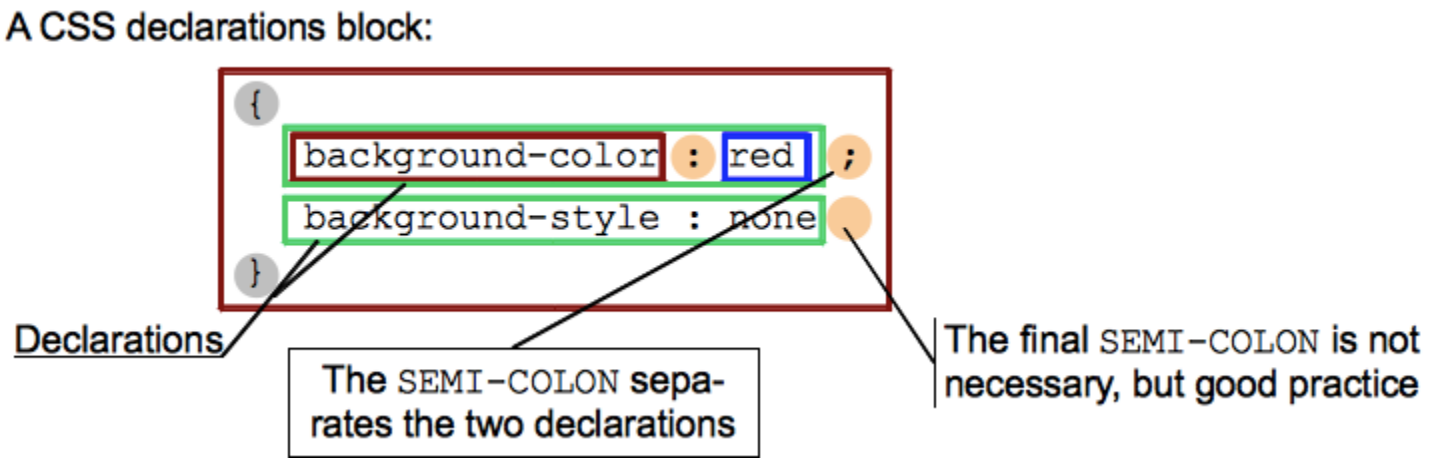
Pseudo Element
A CSS **pseudo-element** is a keyword added to a selector that lets you style a specific part of the selected **element**(s).



CSS Rule-set

Declaration Block

Declarations are grouped in blocks, that is in a structure delimited by an opening and closing curly braces.
The content of a CSS declaration block is a list of semi-colon-separated declarations.
It can be placed inside HTML style attribute without the initial and closing curly braces.

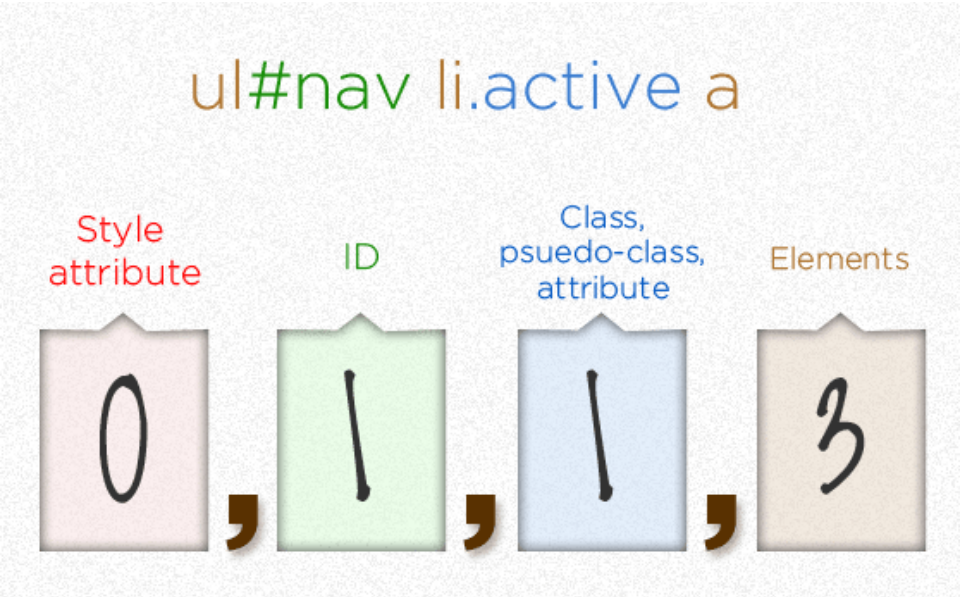


CSS Rule-set

Specificity

- Specificity is the means by which browsers decide which CSS property values are the most relevant to an element and, therefore, will be applied.
- Specificity is based on the matching rules which are composed of different sorts of CSS selectors.

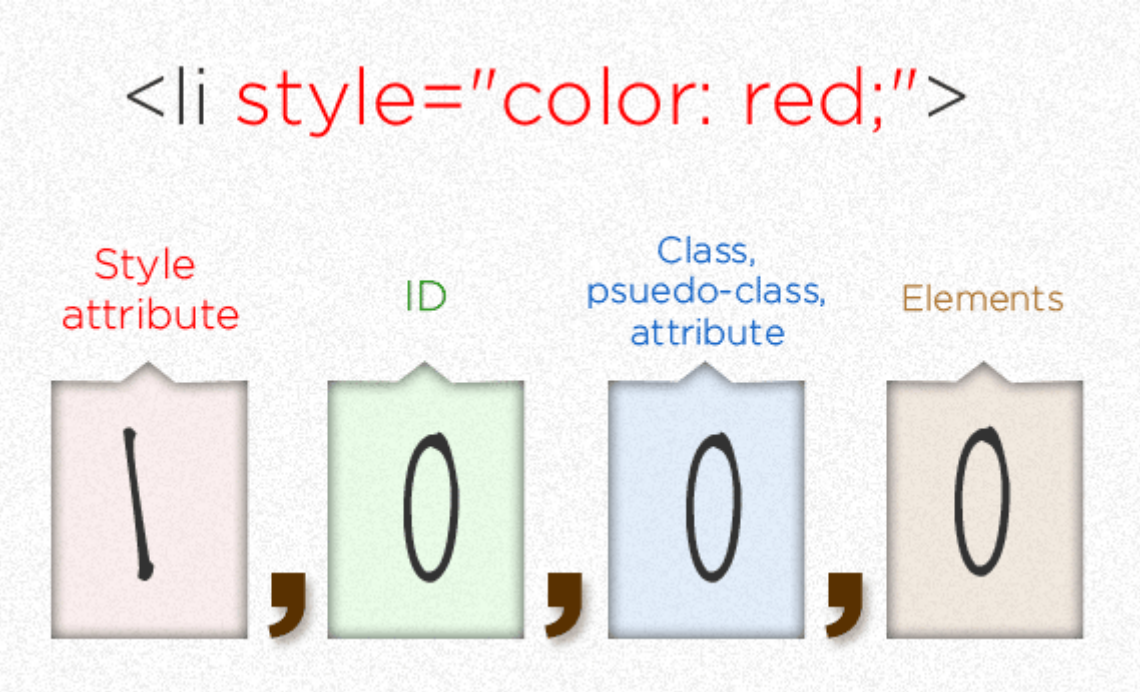
Below is the selector which has the specificity value “0 1 1 3” and explains that it has one ID, one class which is (dot) and three elements (ul, li, a). One thing you will get confused with is which ID is “nav”



Specificity

Inline Style Specificity Value

Below is the example of inline styles and you see it gives the specificity value of “1 0 0 0” which is highest value where it replaces all other values.

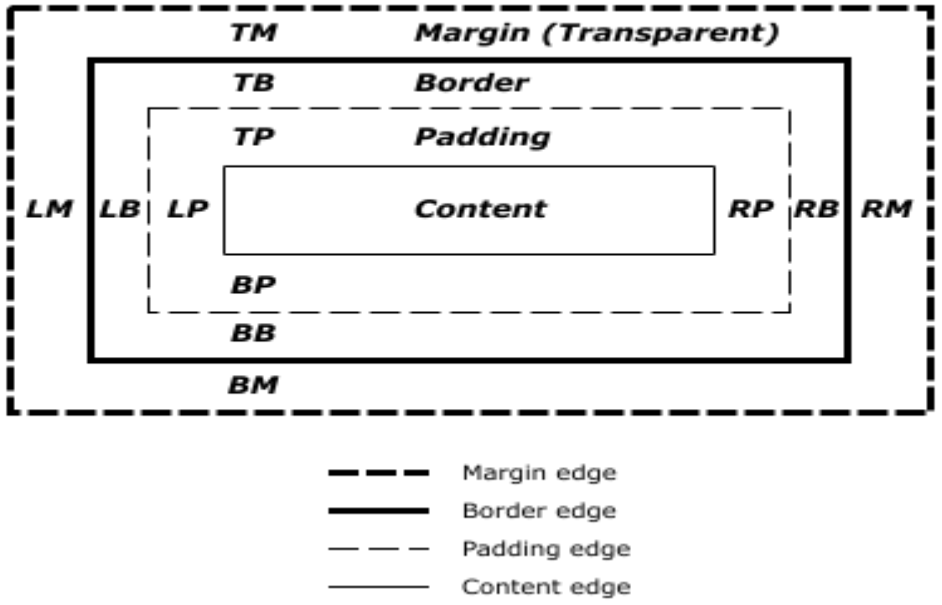


Box Model

Box Model

The **CSS box model** is essentially a **box** that wraps around every HTML element. It consists of: margins, borders, padding, and the actual content.

Below is the diagram which explains the box element of Block level element.

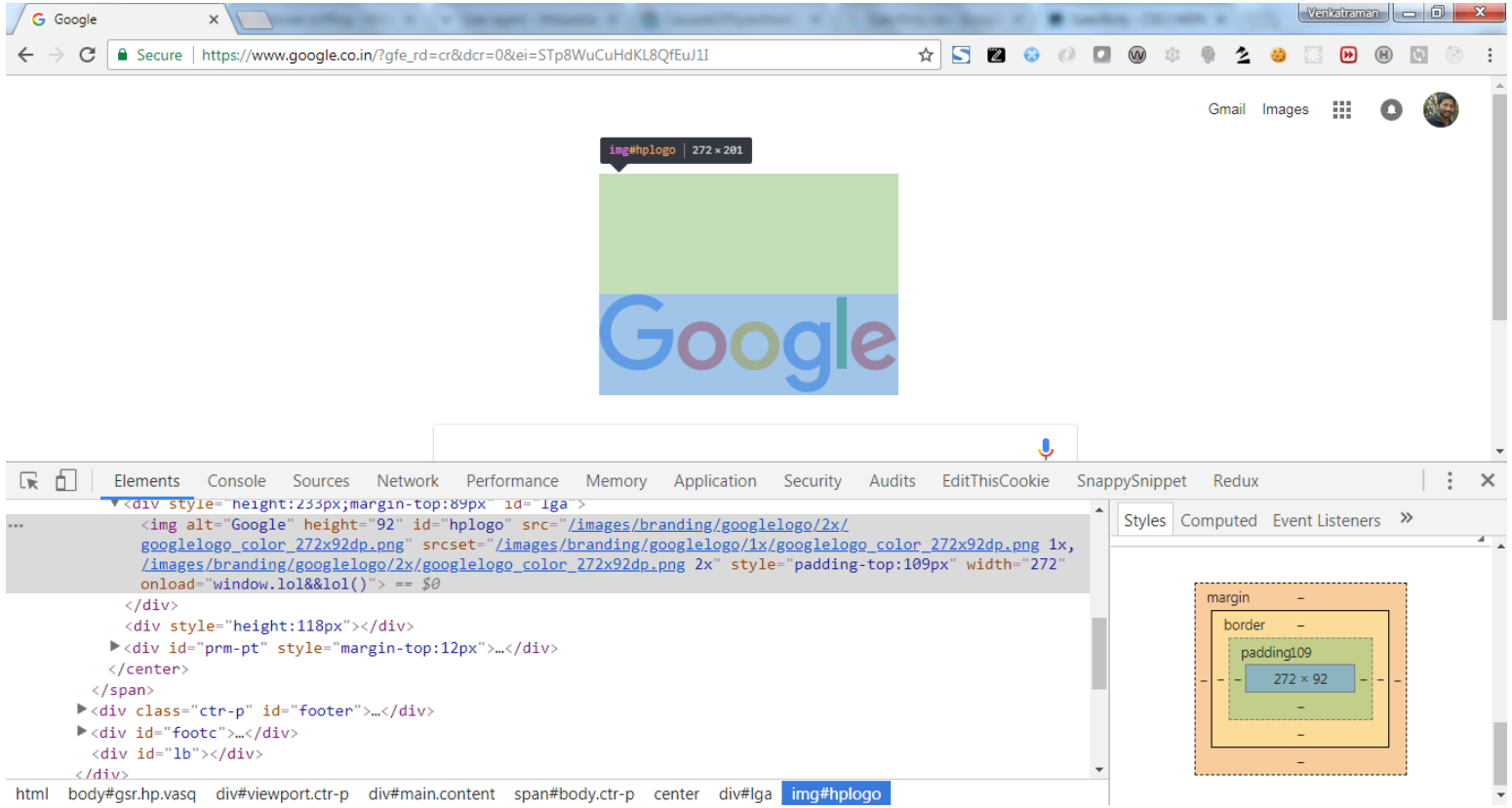


LM, LB, LP - Left Margin, Left Border, Left Padding
TM, TB, TP - Top Margin, Top Border, Top Padding
RM, RB, RP - Right Margin, Right Border, Right Padding
BM, BB, BP - Bottom Margin, Bottom Border, Bottom Padding

Box Model Example

Option in Chrome Developer Tools

Let's take an example of Google.com website, where I have inspected and opened the developer tools. On the right side, it shows the Box Model of the Google Logo.



CSS Types

Stylesheet definitions created with CSS can be inserted into an HTML document in a few different ways. There are three ways of inserting a style sheet.

Style sheets represent a major breakthrough for web page designers, expanding their ability to improve the appearance of their pages.

- External Style Sheet – List of Styles will be storied in a file called "**youfilename.css**" and that can added in every HTML document using <**link**> Element. This offers several benefits when authors separate style sheets from HTML documents.

- Internal style sheet – List of Styles will be stored in every HTML document wrapped with <**style**> element.

- Inline style – Style will added to every element in the attribute "style".

External Stylesheet

Specifying external style sheets
Authors specify external style sheets with the following attributes of the LINK element:

Set the value of href to the location of the style sheet file. The value of href is a URI.

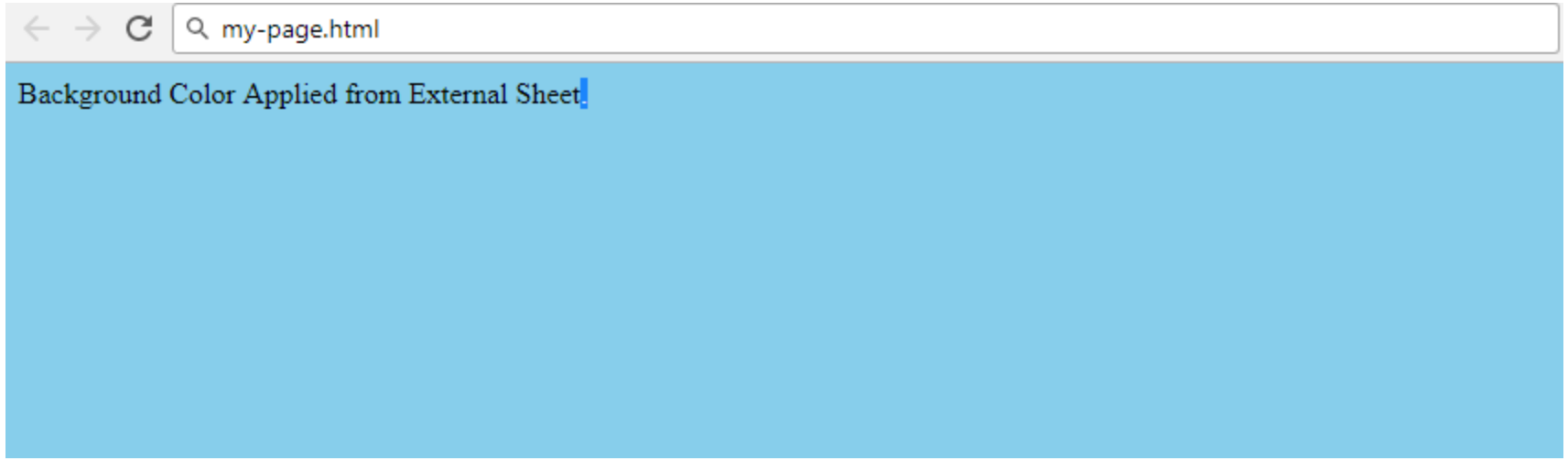
Set the value of the type attribute to indicate the language of the linked (style sheet) resource. This allows the user agent to avoid downloading a style sheet for an unsupported style sheet language.

```
<!doctype html>
<html>
    <head>
        <meta charset="utf-8">
        <link href="styles.css" rel="stylesheet" type="text/css" />
    </head>
    <body>
        Background Color Applied from External Sheet.
    </body>
</html>

```

External Stylesheet

Let’s see how it looks in the Browser.



What its been added in that style file ?
Never mind about style and how it works which will see in our next chapter.

```
1   body {
2       background: skyblue;
3   }
```

Internal Stylesheet

Internal Style Sheet

An internal style sheet may be used if one single page has a unique style.

Internal styles are defined within the <style> element, inside the <head> section of an HTML page:

```
<!doctype html>
<html>
    <head>
        <meta charset="utf-8">
        <style href="styles.css">
            body {
                background: red;
            }
        </style>
    </head>
    <body>
        Background Color Applied from Internal Style Sheet.
    </body>
</html>

```

Internal Stylesheet

Let’s see how it looks in the Browser.

What its been added in the same HTML document file?
Never mind about style and how it works which will see in our next chapter.

```
<head>
    <meta charset="utf-8">
    <style href="styles.css">
        body {
            background: red;
        }
    </style>
</head>
```

Inline Styles

Inline Styles

An inline style may be used to apply a unique style for a single element. The syntax of the value of the style attribute is determined by the default style sheet language.

To use inline styles, add the style attribute to the relevant element. The style attribute can contain any CSS property. Below example has already internal stylesheet and inline style as well. Lets see which one wins!

```
<!doctype html>
<html>
    <head>
        <meta charset="utf-8">
        <style href="styles.css">
            body {
                background: red;
            }
        </style>
    </head>
    <body style="background: green;">
        Background Color Applied from Inline Styles.
    </body>
</html>

```

Internal Stylesheet

Let’s see how it looks in the Browser.

What has been added in the body element?
Inline style has more specificity value, so it will override the external and internal styles.

```
<body style="background: green;">
    Background Color Applied from Inline Styles.
</body>
```

Preferred Style Sheets

To make a style sheet preferred, set the rel attribute to "stylesheet" and name the style sheet with the title attribute.

The author may specify that one of the alternates is a preferred style sheet. User agents should apply the author's preferred style sheet unless the user has selected a different alternate.

```
<LINK href="mystyle.css" title="compact" rel="stylesheet"
type="text/css">
```

Alternate Style Sheets

Authors may group several alternate style sheets (including the author's preferred style sheets) under a single style name.
When a user selects a named style, the user agent must apply all style sheets with that name. User agents must not apply alternate style sheets with a different style name.

The section on specifying external style sheets explains how to name a group of style sheets.

```
<LINK href="mystyle.css"
title="Medium"
rel="alternate stylesheet"
type="text/css">
```

Persistent Style Sheets

To make a style sheet persistent, set the rel attribute to "stylesheet" and don't set the title attribute.

Authors may also specify persistent style sheets that user agents must apply in addition to any alternate style sheet.

```
<LINK href="mystyle.css" rel="stylesheet" type="text/css">
```

Comments

CSS uses the same "block comment" syntax as the C-like languages - you start a comment with /* , and end it with */

A CSS comment is used to add explanatory notes to the code or to prevent the browser from interpreting specific parts of the style sheet. By design, comments have no effect on the layout of a document.

The /* */ comment syntax is used for both single and multiline comments.

```
/* A one-line comment */

/* A comment which stretches over several lines */
```

Media Types

Media Type	Description
screen	Intended for non-paged computer screens.
tty	Intended for media using a fixed-pitch character grid, such as teletypes, terminals, or portable devices with limited display capabilities.
tv	Intended for television-type devices (low resolution, color, limited scrollability).
projection	Intended for projectors.
handheld	Intended for handheld devices (small screen, monochrome, bitmapped graphics, limited bandwidth).
print	Intended for paged, opaque material and for documents viewed on screen in print preview mode.
braille	Intended for braille tactile feedback devices.
aural	Intended for speech synthesizers.
all	Suitable for all devices.

Image Types

Image Types	Description
JPEG	Joint Photographic Experts Group is a commonly used method of glossy compression for digital images, particularly for those images produced by digital photography.
GIF	Graphics Interchange Format, It is a raster graphics format; that is the image has a fixed size. CompuServe developed and introduced the format in 1987. Today, it is widely used on the World Wide Web.The format supports up to 8 bits per pixel, or 256 colors
PNG	Portable Network Graphics, is a raster graphics file format that supports lossless data compression. PNG was created as an improved, non-patented replacement for Graphics Interchange Format (GIF)

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